

# PATENT SPECIFICATION

(11) 1357517

- 1357517 (21) Application No. 16077/73 (22) Filed 4 April 1973  
 (44) Complete Specification published 26 June 1974  
 (51) International Classification A63H 17/00 33/08  
 (52) Index at acceptance  
 A6S 6A6 6C1B 6L



## (54) JUNIOR VEHICLEBUILDER

- (71) I, MR. ERIC RAYMOND KNIGHT, 178 Kent Road, Halesowen, Worcs. B62 8PN, British, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—
- This invention takes the form of a constructional kit for young (even very young) children, consisting of twenty-two interchangeable and interconnecting parts, (listed hereafter in List One and shown in drawings 1—11), which a child of three years or over, may assemble, by means of mortice and tenon and/or peg and socket joints into robust, realistic models of a variety of motor vehicles, (listed hereafter in List Two and illustrated in drawings 12—14).
- These parts could be:—
- Manufactured in wood, using conventional woodworking techniques. Note: Drawings 1—11 are for wooden (or solid) parts.
  - Cast, or moulded in thermoplastic or thermosetting synthetic materials, or in synthetic or natural rubber, using appropriate conventional techniques.
  - Cast, or moulded in metal, using appropriate conventional techniques. Note: Parts in metal, rubber or plastic could be hollow.
- List One
- The kit would consist of the following parts (as shown in the indicated figures of the accompanying drawings) shaped appropriately in representation of:—
- |   |   |    |
|---|---|----|
| A—Main Lower Body Section:<br>Fig. 1A End Elevation<br>Fig. 1B Plan.<br>Fig. 1C Side Elevation. | C—Boot Section:<br>Fig. 3A End Elevation.<br>Fig. 3B Plan.<br>Fig. 3C Side Elevation.                     | 45 |
| B—Bonnet Section:<br>Fig. 2A Side Elevation.<br>Fig. 2B Plan.<br>Fig. 2C End Elevation.         | D—Front Upper Body Section:<br>Fig. 4A Side Elevation.<br>Fig. 4D Plan.<br>Fig. 4C End Elevation.         | 50 |
|   | E—Rear Upper Body (Saloon) Section:<br>Fig. 4B Side Elevation.<br>Fig. 4E Plan.<br>Fig. 4C End Elevation. | 55 |
|   | F—Rear Upper Body (Coupé) Section:<br>Fig. 5A Side Elevation.<br>Fig. 5D Plan.<br>Fig. 5C End Elevation.  | 60 |
|   | G—Rear Upper Body (Van) Section:<br>Fig. 5B Side Elevation.<br>Fig. 5E Plan.<br>Fig. 5C End Elevation.    | 65 |
|   | H—Estate Car Rear Section:<br>Fig. 6A End Elevation.<br>Fig. 6B Plan.<br>Fig. 6C Side Elevation.          | 70 |
|   | I—Upper Body (Sports) Section:<br>Fig. 7A Side Elevation.<br>Fig. 7B Plan.<br>Fig. 7C End Elevation.      | 75 |
|   | J—Coach Front Section:<br>Fig. 8A Side Elevation.<br>Fig. 8B Plan.<br>Fig. 8C End Elevation.              | 80 |
|   | K—Auxiliary Lower Body Section:<br>Fig. 9A Side Elevation.<br>Fig. 9B Plan.<br>Fig. 9C End Elevation.     |    |
|   | L—"Fastback" Rear Section:<br>Fig. 10A End Elevation.<br>Fig. 10B Side Elevation.<br>Fig. 10C Plan.       |    |

[Price 25p]

M—Breakdown Crane Section:  
Fig. 11A Side Elevation.  
Fig. 11B End Elevation.  
Fig. 11C Plan.

5 N—Rooftop Warning Light:  
Fig. 11D End Elevation.  
Fig. 11E Side Elevation.  
Fig. 11F Plan.

Four Wheels:  
10 Figs. 11G, 11H.

Four Axle Studs:  
Figs. 11J, 11K.

#### List Two

15 By connecting suitable combinations of the parts listed in List One, above, it is possible to construct, as shown in the indicated figures of the accompanying drawings, reasonably realistic models of:

- 20 1. A basic Saloon Car (Fig. 12B)  
using parts A, B, C, D and E
2. A Coupé (Fig. 13C)  
using parts A, B, C, D and F
3. A "Pick Up" Truck (Fig. 14D)  
using parts A, B and D
- 25 4. A Van (Fig. 13A)  
using parts A, B, D and G
5. An Estate Car (Fig. 12E)  
using parts A, B, D, G and H
- 30 6. A "Fastback" Saloon Car (Fig. 13D)  
using parts B, D, K and L
7. Two Sports Cars (Fig. 12D and Fig. 14E)  
using parts A, B, C and I.
- 35 Note:—Two cars depending upon the position of part I
8. A Touring Coach—Single Deck Bus (Fig. 13B)  
using parts A, G, H and J
- 40 9. A Fire Engine (Fig. 14C)  
using parts J, K, L and N
10. An Ambulance (Fig. 14B)  
Using parts A, G, J and N
11. A "Breakdown" Truck (Fig. 12C)  
using parts A, B, D, M and N
- 45 12. A Motorised Caravan, Minibus, Dustcart, Covered Lorry (depending upon the child's imagination) (Fig. 12A)  
using parts A, G, and J

50 By the addition of part N, as in Fig. 14A, any model 1 to 6 can be converted to a Police

Vehicle, or models 1, 2 and 6 to a Taxi, again depending upon the child's imagination. By omitting part C, models 1, 2 and 7 may be considered as "mini" versions, complete in themselves. 55

#### Methods of Construction and Assembly

In order to assemble or construct the basic Saloon Car (Fig. 12B) Tenon 1 (Fig. 2A) of the Bonnet Section (Part B) is inserted into Mortice 2 (Fig. 1C) of the Main Lower Body Section (Part A) and Tenon 3 (Fig. 3C) of the Boot Section (Part C) is inserted into Mortice 4 (Fig. 1C). 60

The three pegs 7 (Fig. 4A) of the Front Upper Body Section (Part D) are then inserted into the corresponding sockets 5 (Fig. 1B) and the four pegs 8 (Fig. 4B) of the Rear Upper Body (Saloon) Section (Part E) inserted into the corresponding sockets 6 (Fig. 1B). The wheels are then fitted on Axle Studs inserted in sockets 9 (Fig. 2A) and sockets 10 (Fig. 1C). 65

In order to assemble or construct the Coupé (Fig. 13C) Part E is removed and replaced by part F (Fig. 5A). 75

In order to assemble or construct the "Pick-Up" Truck (Fig. 14D) Part E is removed as above, and not replaced. Part C is also removed.

In order to assemble or construct the Van (Fig. 13A) the four pegs 11 of part G (Fig. 5B) are inserted into the corresponding sockets 6 (Fig. 1B) on the body of the "Pick-Up" Truck above. 80

In order to convert the Van into an Estate Car, Tenon 12 (Fig. 6C) of the Estate Car Rear Section (Part H) is inserted into Mortice 4 (Fig. 1C) to form the model shown in Fig. 12E. 85

In order to convert the Estate Car into a Touring Coach or Single Deck Bus (Fig. 13B), parts B, and D are removed and Tenon 13 (Fig. 8A) of Coach Front Section (Part J) is inserted into Mortice 2 (Fig. 1C). The wheels are transferred from Part B to Part J. 95

In order to convert the Touring Coach (Model 8) into a Motorised Caravan, Minibus, Covered Lorry or Dustcart (Model 12) depending upon the child's imagination, Part H is removed, to form the model shown in Fig. 12A. 100

This model in turn, may be converted into an Ambulance (Fig. 14B) by inserting peg 14 (Fig. 11D) of Part N into socket 15 (Fig. 4A) of Part D. 105

Similarly, the "Pick-Up" Truck (Fig. 14D) may be converted into a "Breakdown" Truck (Fig. 12C) by inserting peg 14 (Fig. 11D) of part N into socket 15 (Fig. 4A) of Part D and inserting pegs 16 (Fig. 11B) of Part M into either the forward or rear pairs of sockets 6 (Fig. 1B). 110

To assemble or construct a Sports Car,

Parts A, B, and C are connected as for the basic Saloon Model. Parts D and E are omitted and instead, Part I is fitted. This may be done by the insertion of the four  
 5 pegs 17 (Fig. 7A) either into the rear pair of sockets 5 (Fig. 1B) and the forward pair of sockets 6 (Fig. 1B) or into all four of sockets 6, thereby forming respectively Sports Car I (Fig. 12D) or Sports Car II (Fig.  
 10 14E) when wheels are added.

A "Fastback" Saloon Car (Fig. 13D) may be constructed by inserting Tenon 1 (Fig. 2A) of Part B into Mortice 18 (Figs. 9A, 9B) of Auxiliary Body Section (Part K) and Tenon 20 (Fig. 10B) into Mortice 19 (Fig. 9A). The three pegs 7 (Fig. 4A) of Part D are then inserted into the corresponding three sockets 21 (Fig. 9B) of Part K and wheels added.

20 This model in turn may be converted into a Fire Engine (Fig. 14C) by replacing parts B and D with Part J. Tenon 13 (Fig. 8A) being inserted into Mortice 19 (Fig. 9A) and peg 14 (Fig. 11D) of Part N being inserted  
 25 into socket 22 of Part J (Fig. 8A) and wheels being fitted.

#### Objects of the Invention

The object of this invention is to provide  
 30 a child, too young to possess the degree of manual dexterity, logical thought and patient

endeavour required by more sophisticated constructional toys, with the means, despite these limitations, of deriving a sense of constructive achievement, by the construction of  
 35 models which:— (i) are robust (ii) are reasonably realistic, requiring the use of some imagination, but not more than a young child possesses (iii) encourage both imagination and logical thought (iv) are simply assembled in a manner within the capabilities of a  
 40 very young child.

#### WHAT I CLAIM IS:—

A constructional toy specifically designed for young children consisting of a plurality of interchangeable and interlocking component parts (manufactured in wood, metal,  
 45 plastics, synthetic or natural rubber) which are designed (both individually and collectively) and constructed (both individually and collectively) substantially as herein described  
 50 with reference to and as illustrated in the accompanying drawings so as to permit them to be assembled in varying combinations to form recognizable models of a wide variety  
 55 of types of motor vehicles as herein described with reference to and as illustrated in the accompanying drawings.

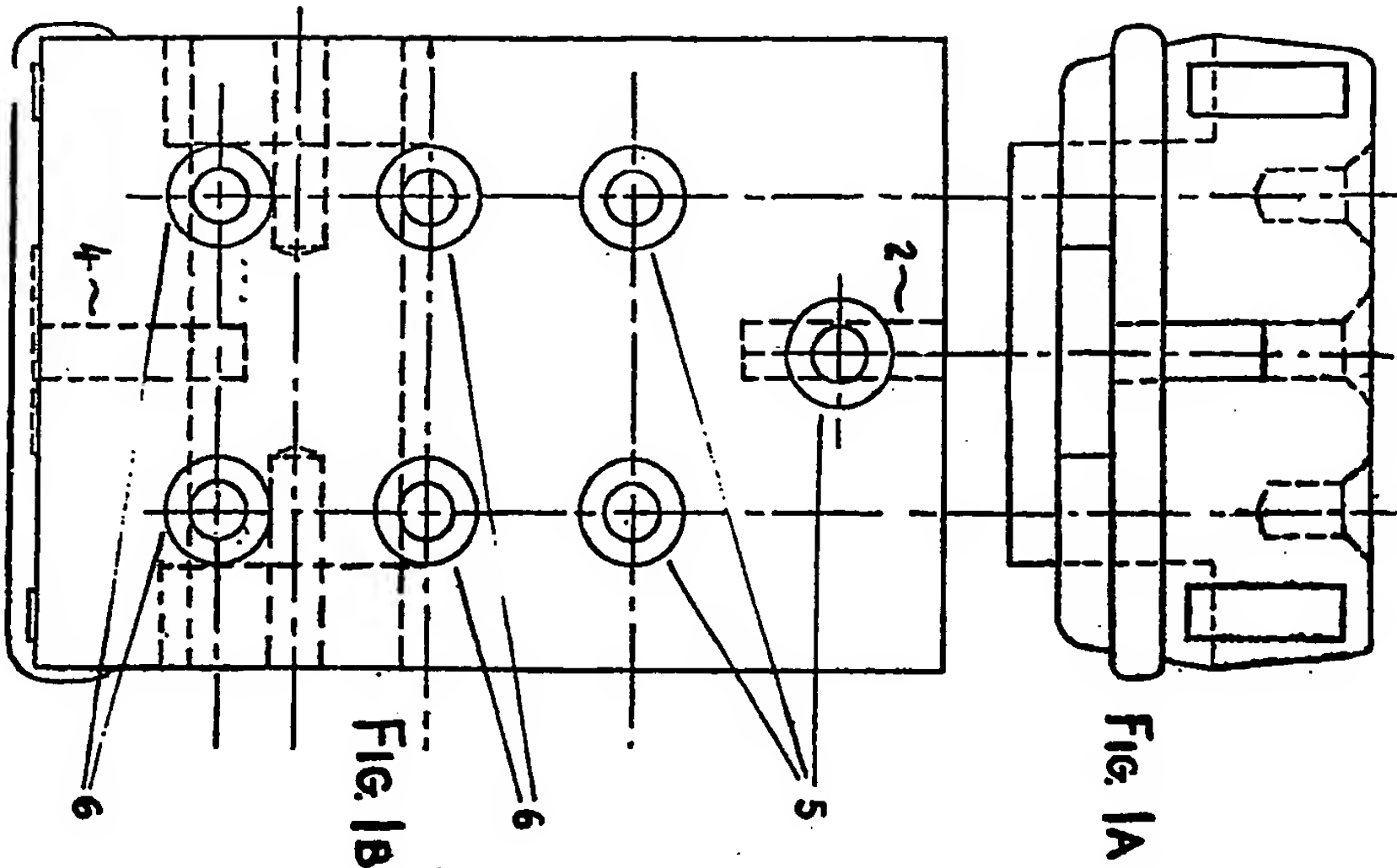
ERIC R. KNIGHT.

1,357,517  
14 SHEETS

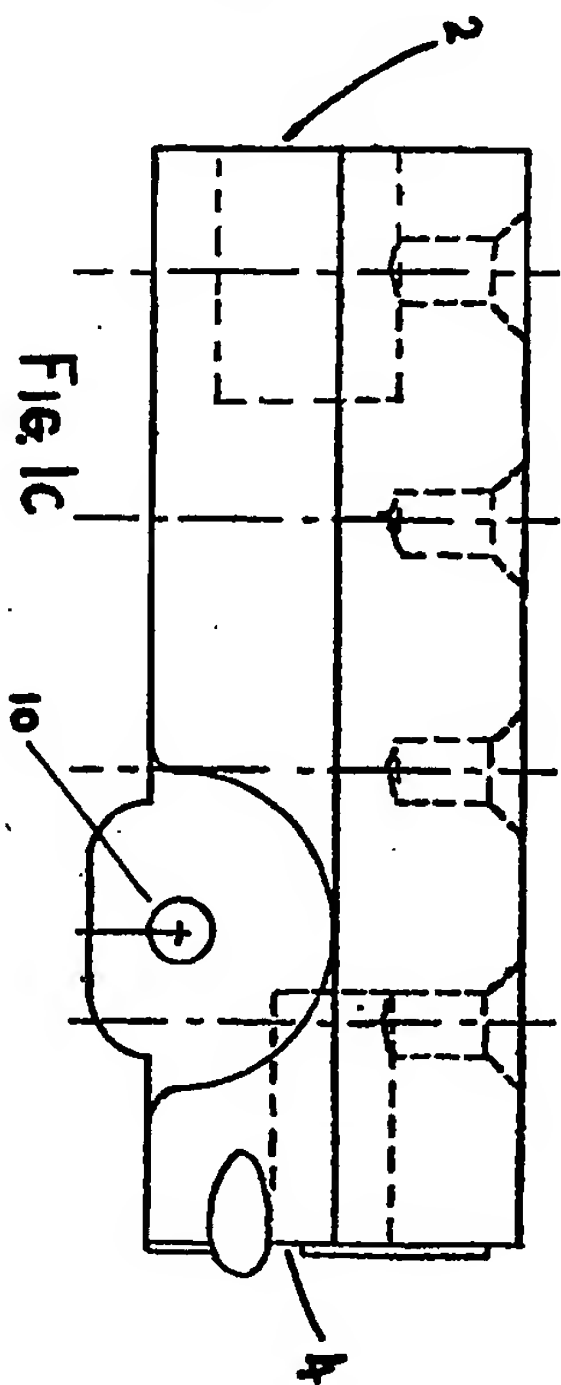
COMPLETE SPECIFICATION

This drawing is a reproduction of  
the Original on a reduced scale.

SHEET 1



PART A



1,357,517

COMPLETE SPECIFICATION

14 SHEETS

This drawing is a reproduction of the Original on a reduced scale

SHEET 2

Fig 2A

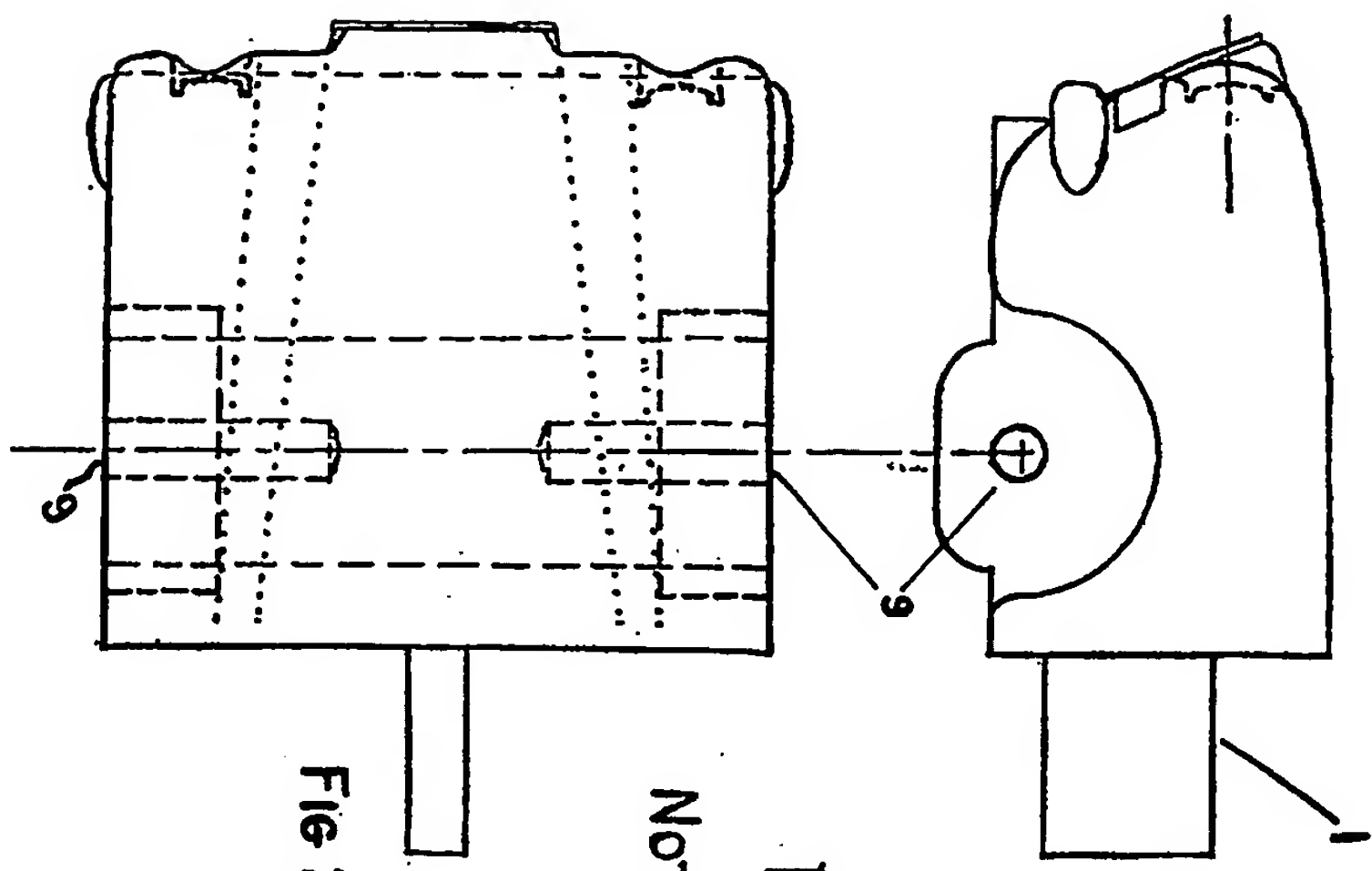
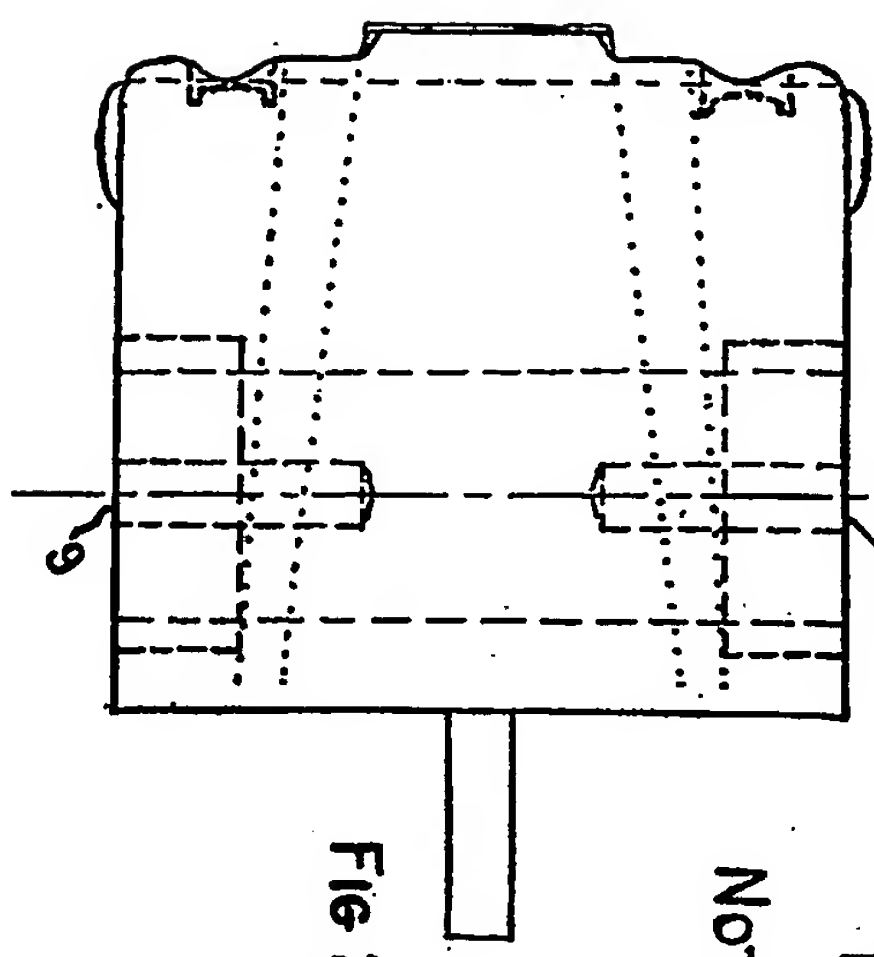


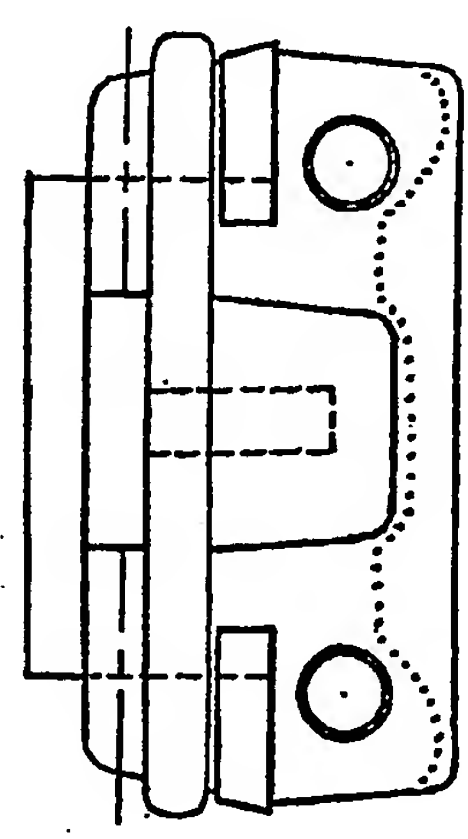
Fig 2B



PART B

NOTE ..... = ROUNDED EDGES

Fig. 2c



1,357, 517

14 SHEETS

COMPLETE SPECIFICATION

This drawing is a reproduction of  
the Original on a reduced scale.  
SHEET 3

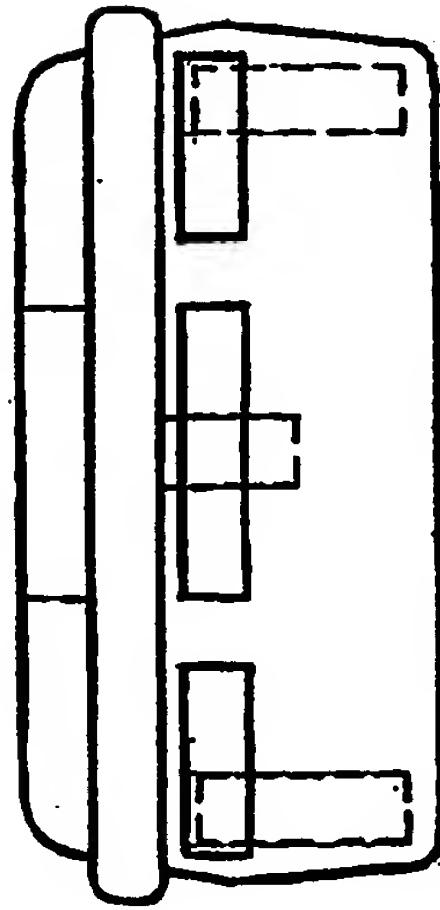


Fig. 3A

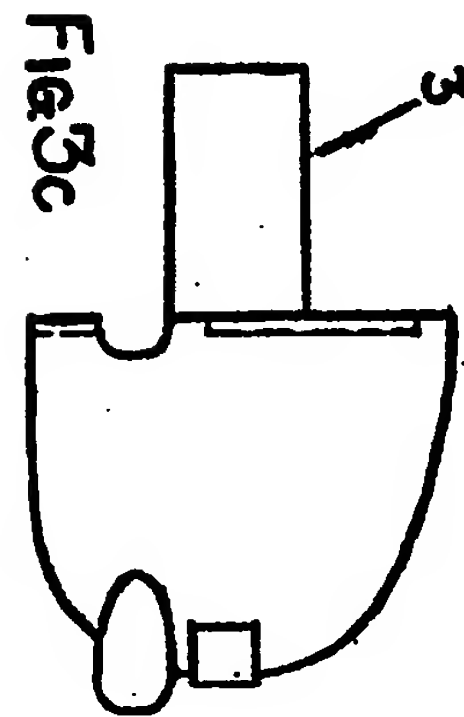


Fig. 3c

PART C

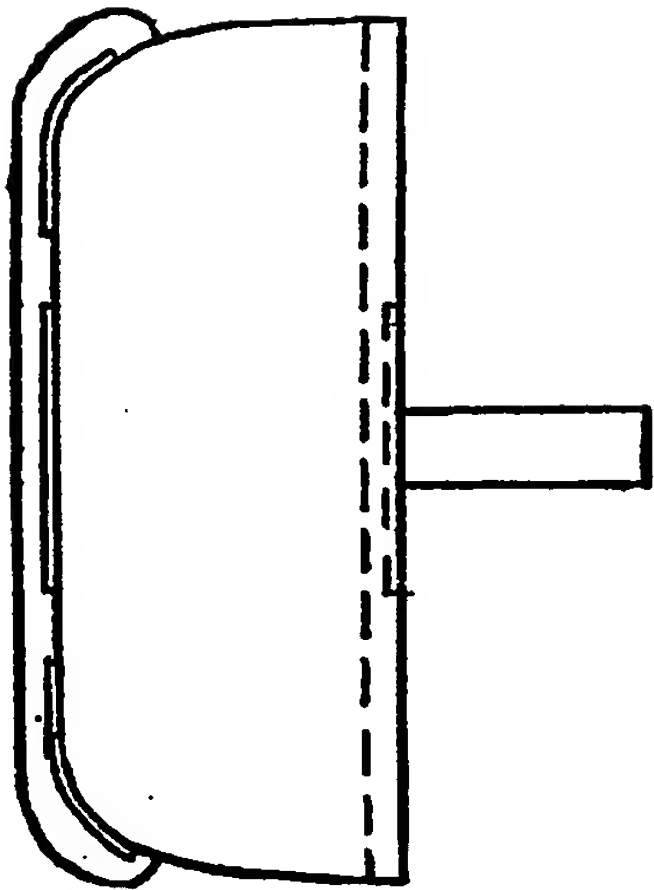
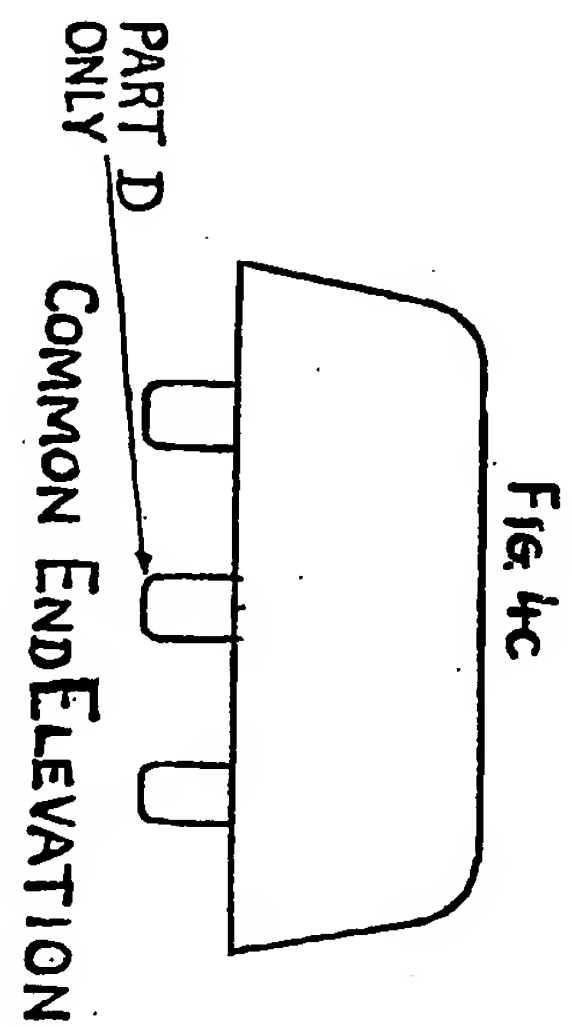
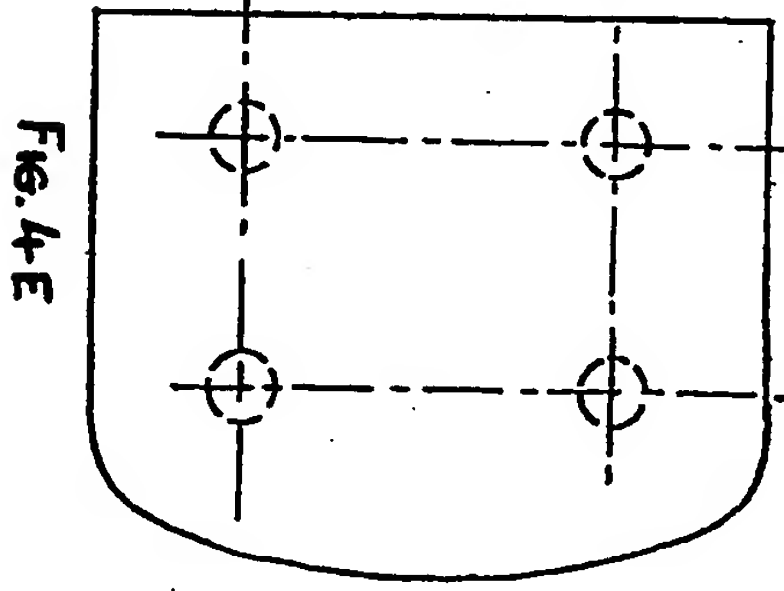
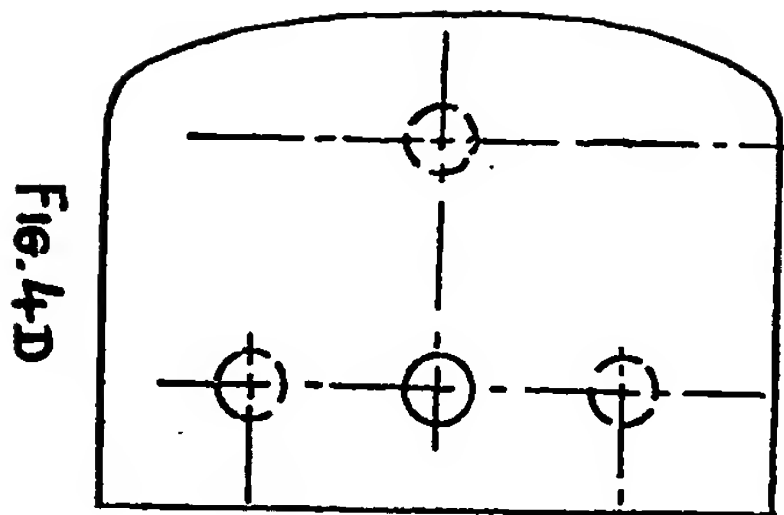
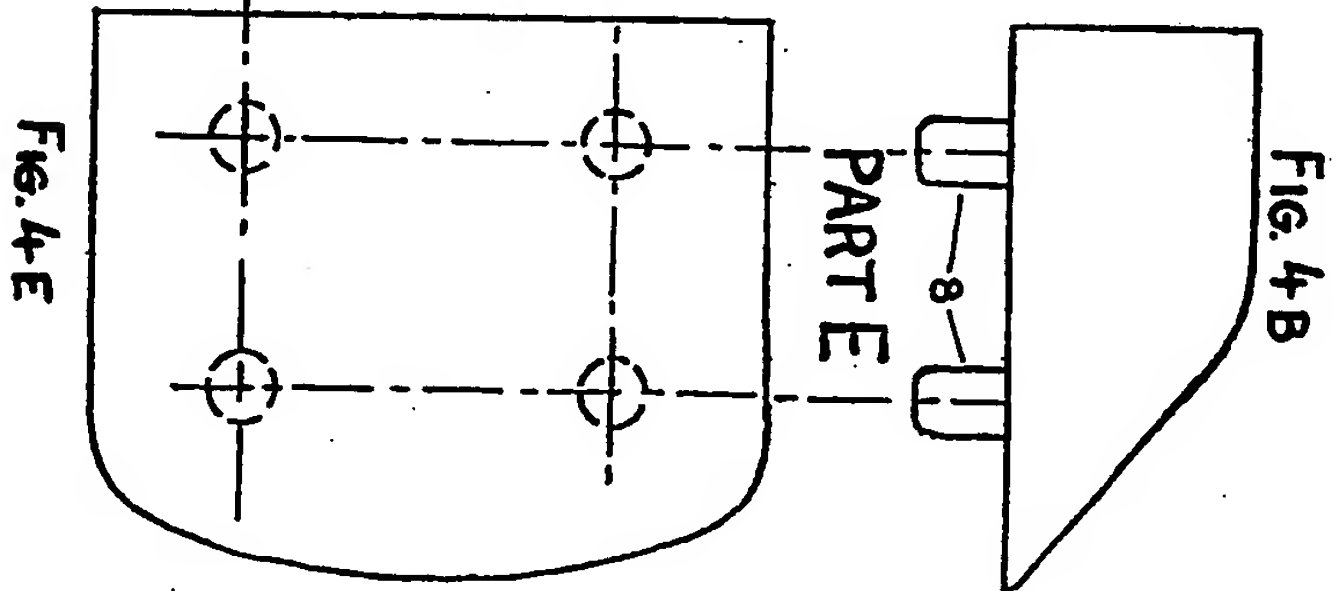
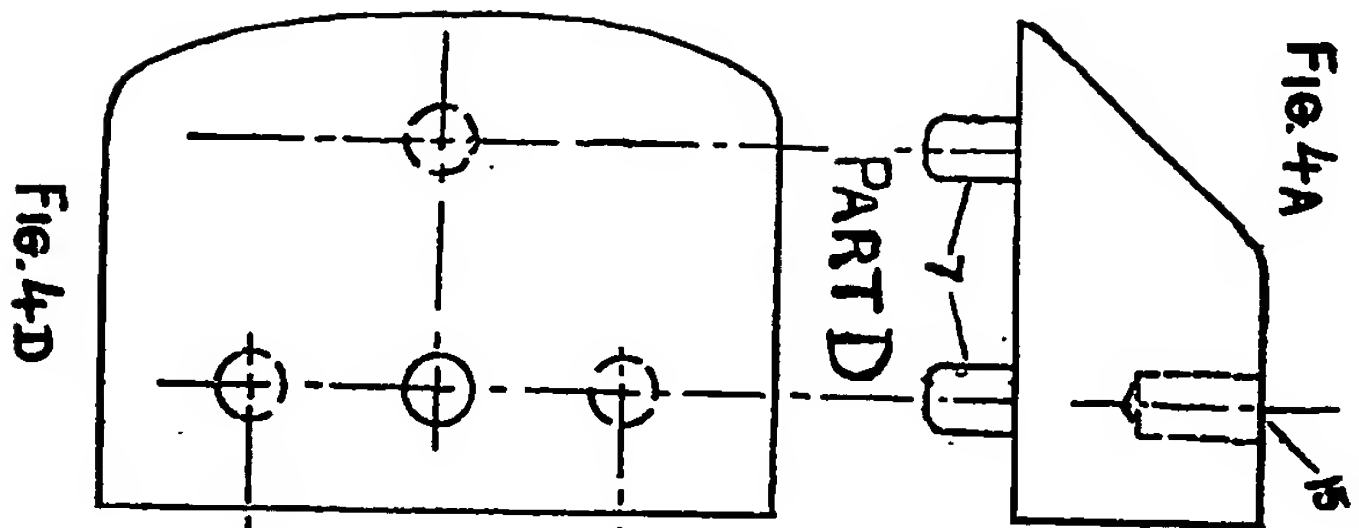


Fig. 3B

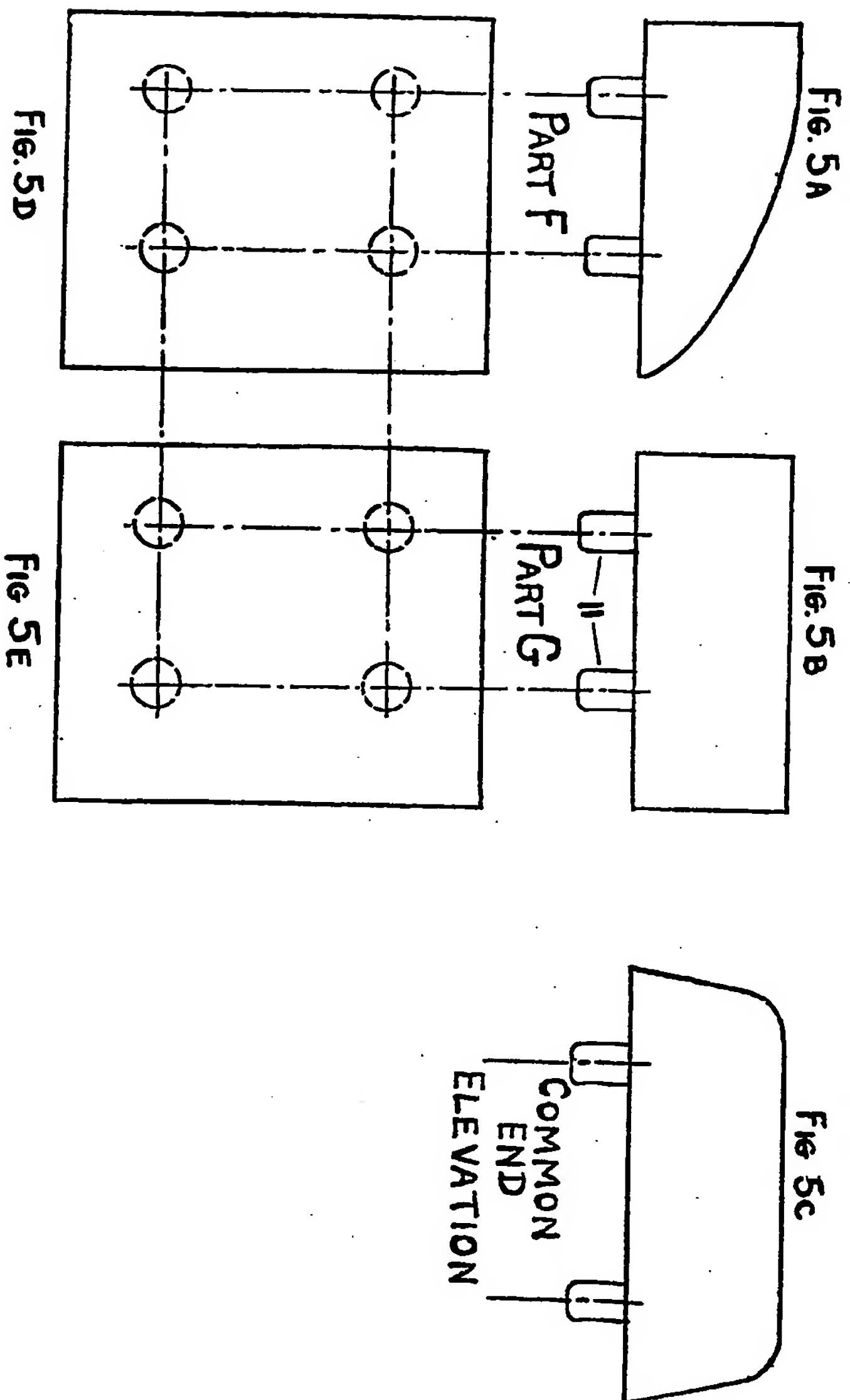


1,357,517

14 SHEETS

COMPLETE SPECIFICATION

This drawing is a reproduction of  
the Original on a reduced scale.  
SHEET 5

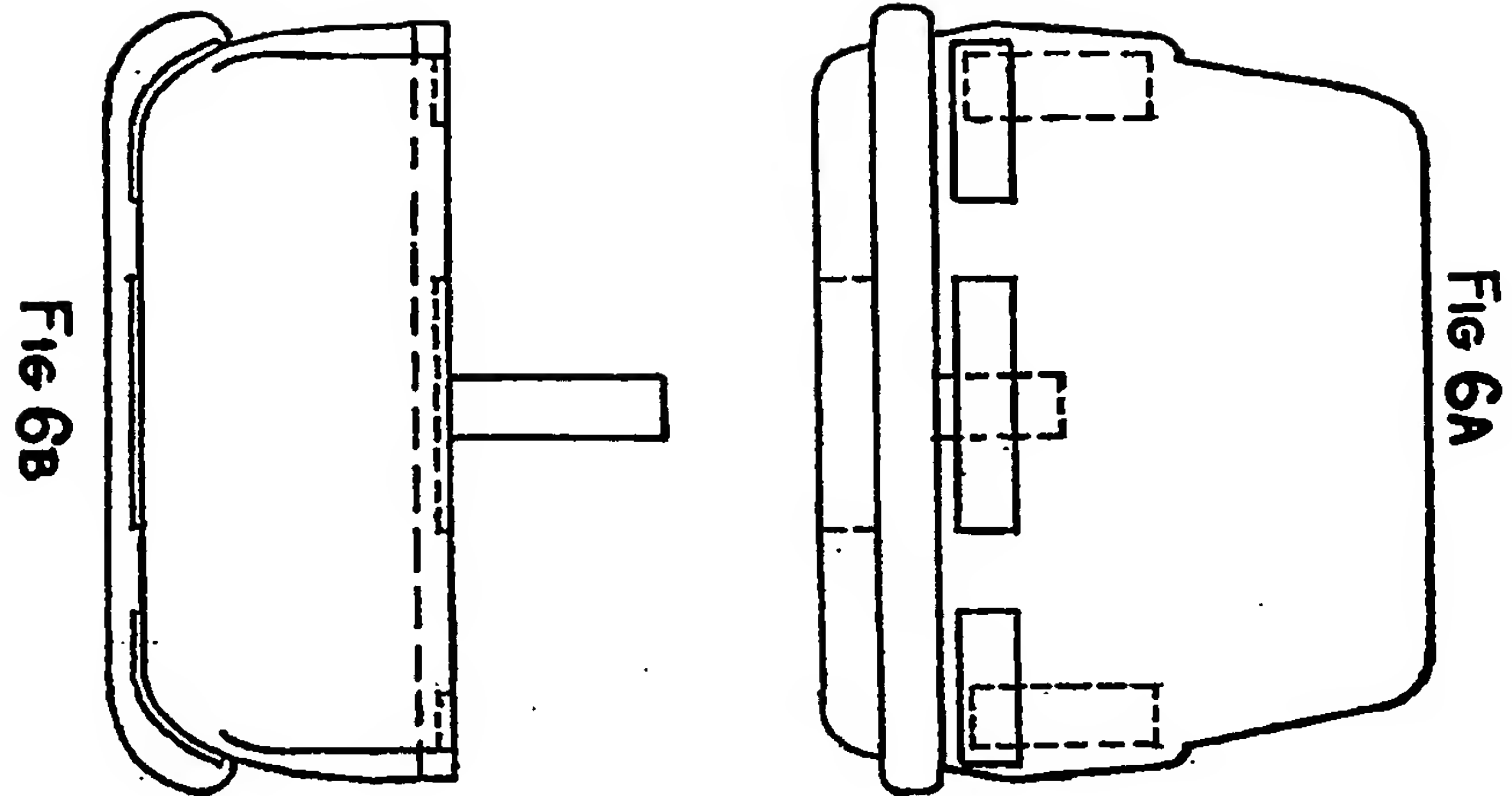




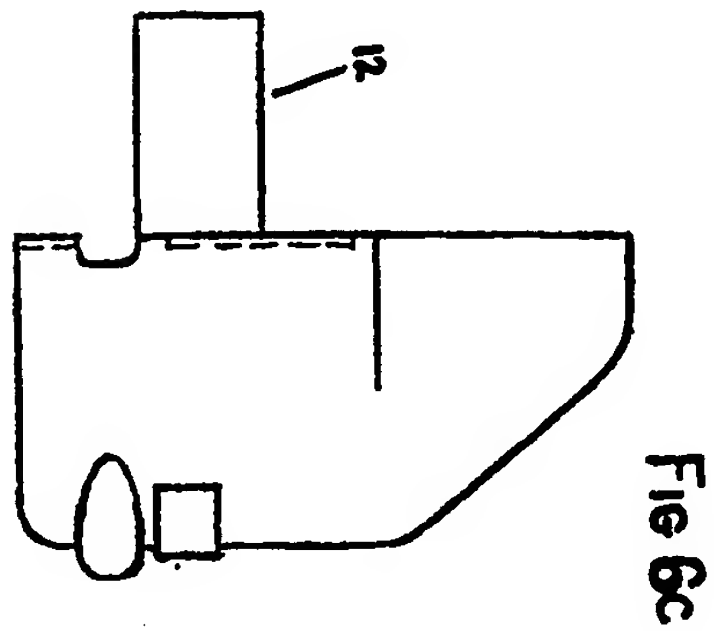
1,357,517  
14 SHEETS

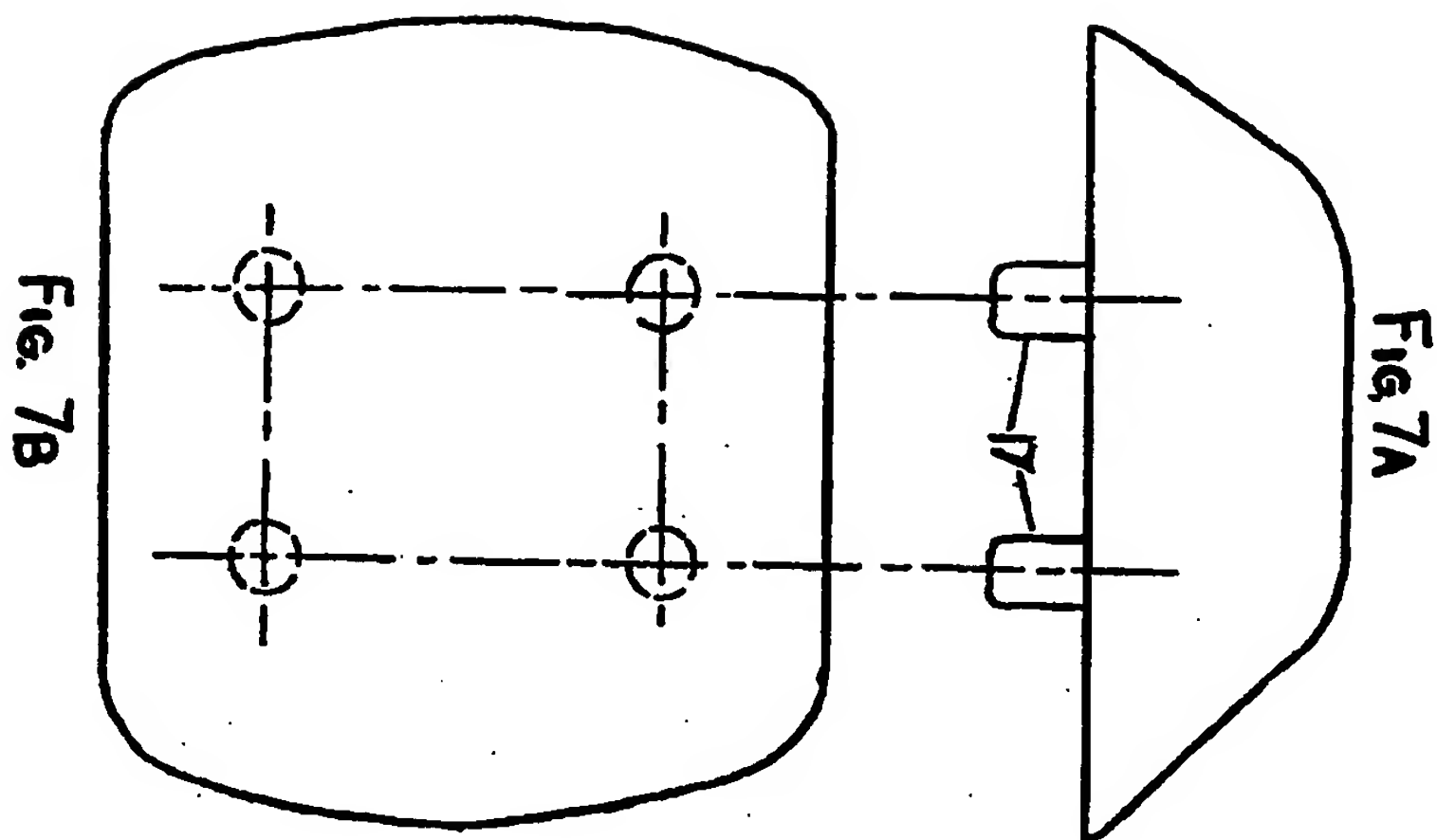
COMPLETE SPECIFICATION

This drawing is a reproduction of  
the Original on a reduced scale.  
SHEET 6

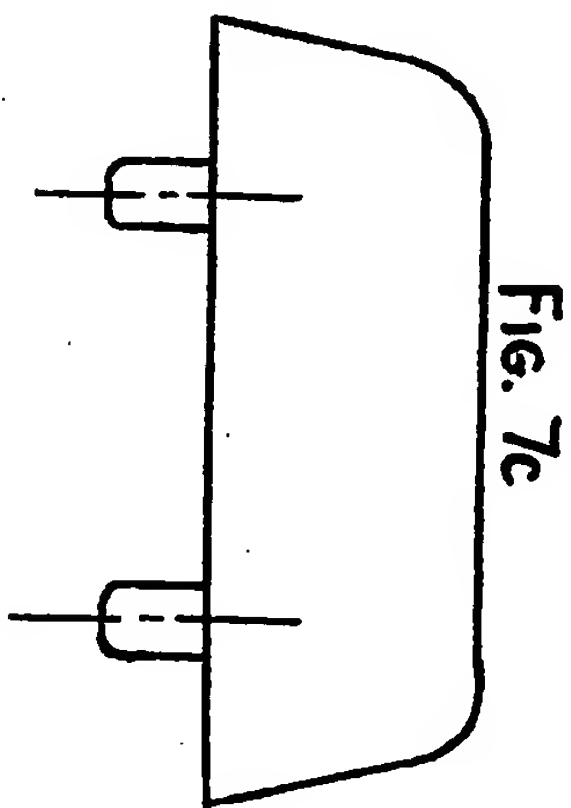


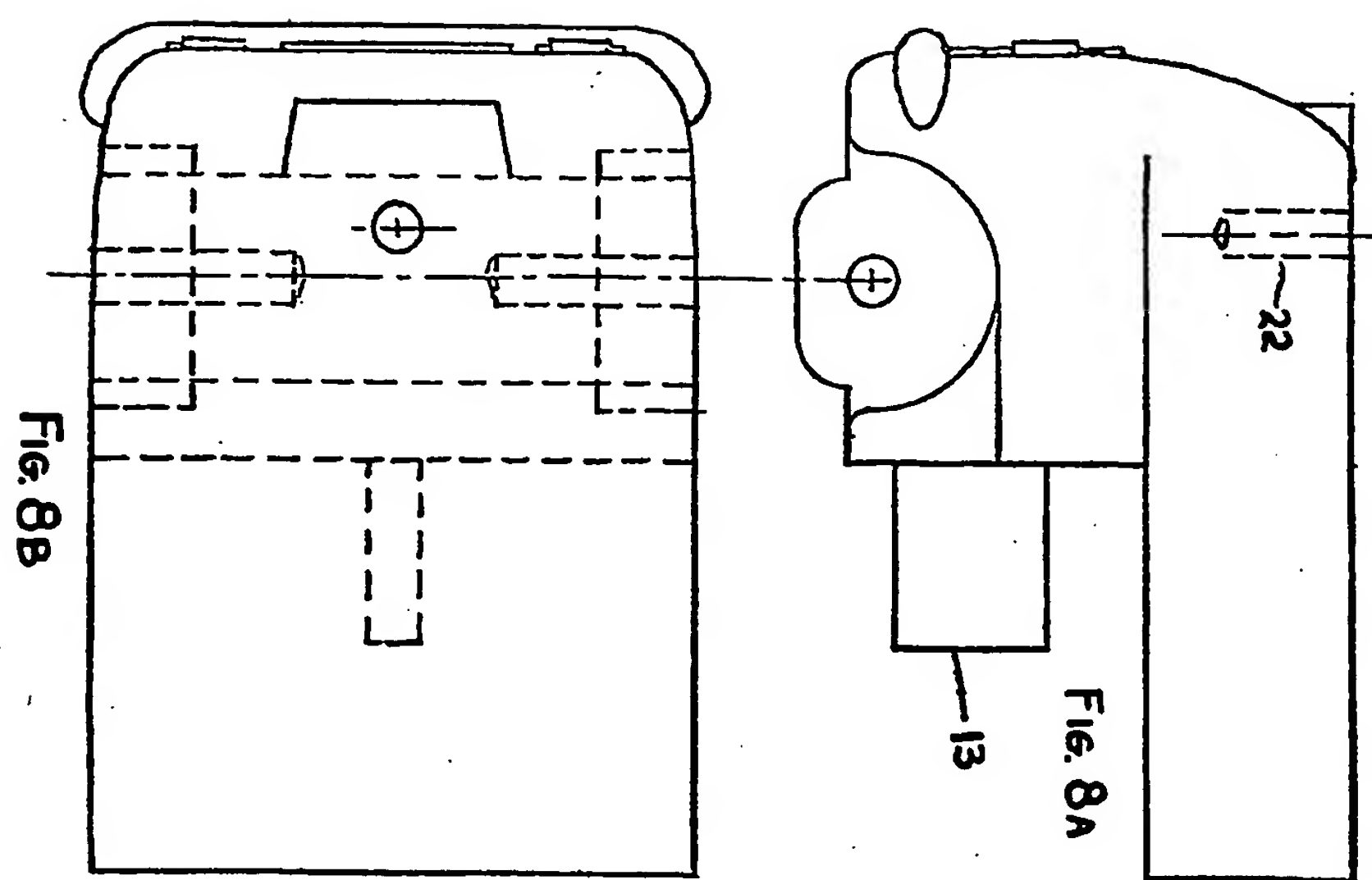
PART H



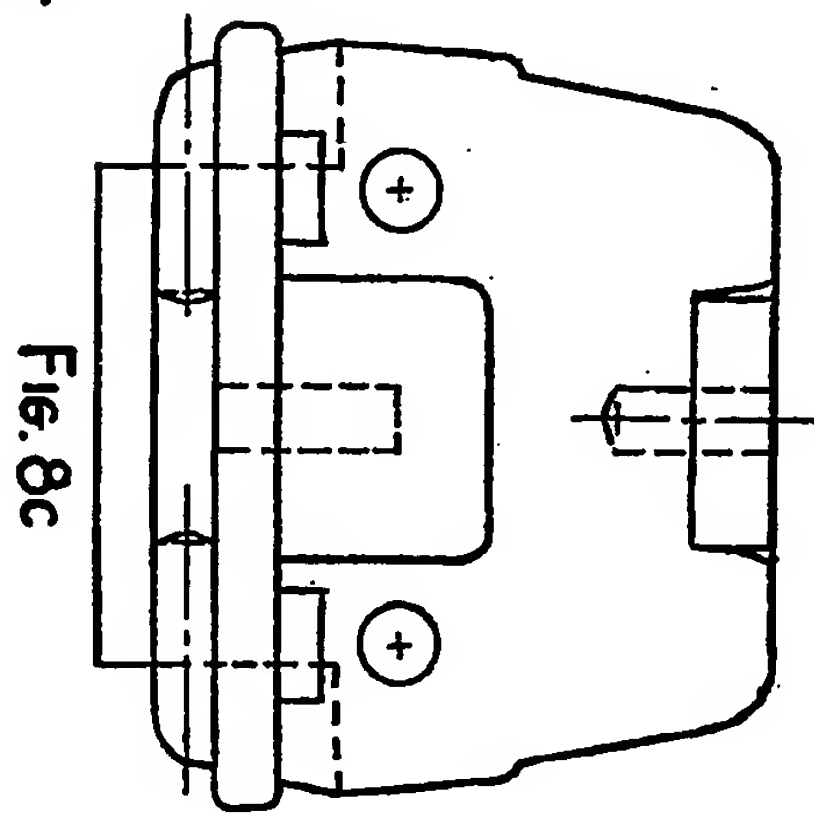


PART I





PART J



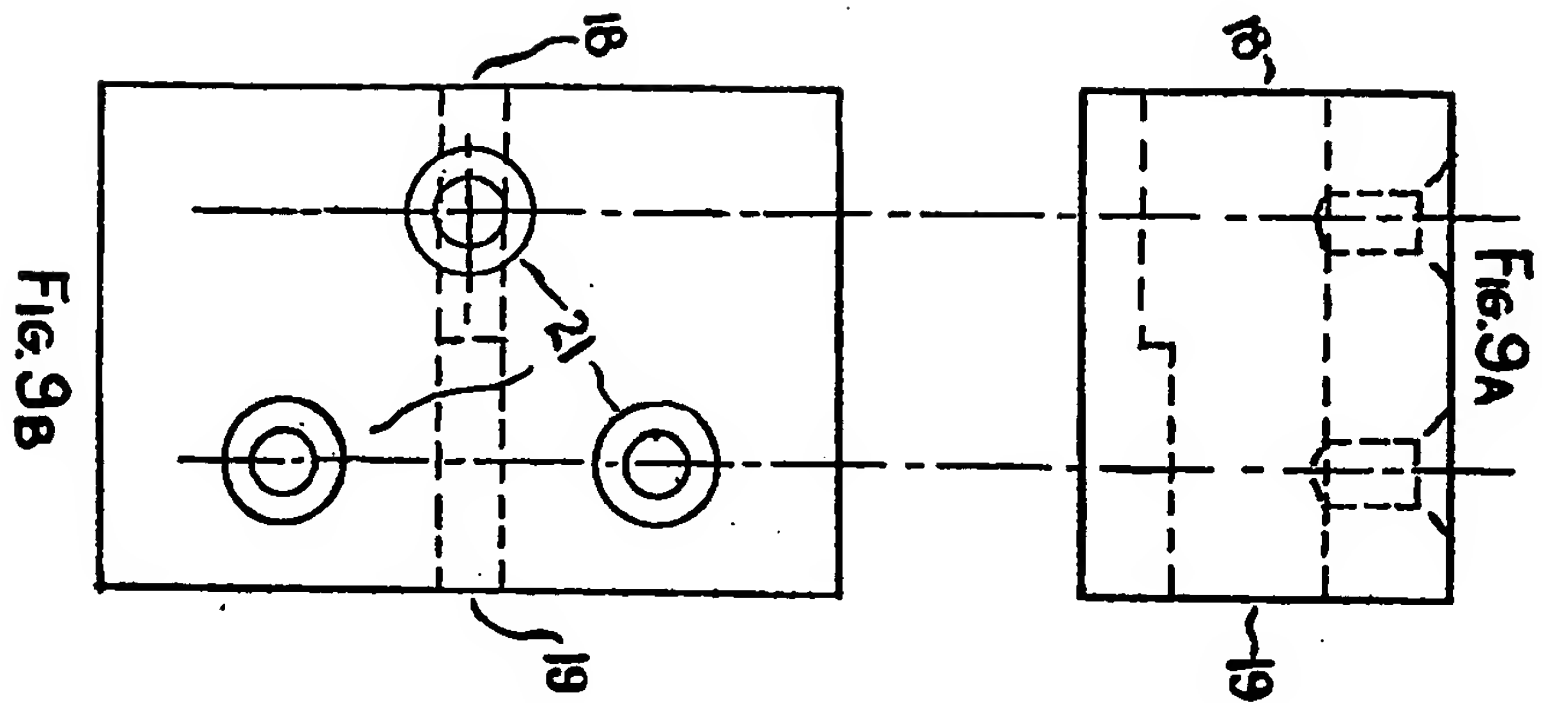
1,357,517

COMPLETE SPECIFICATION

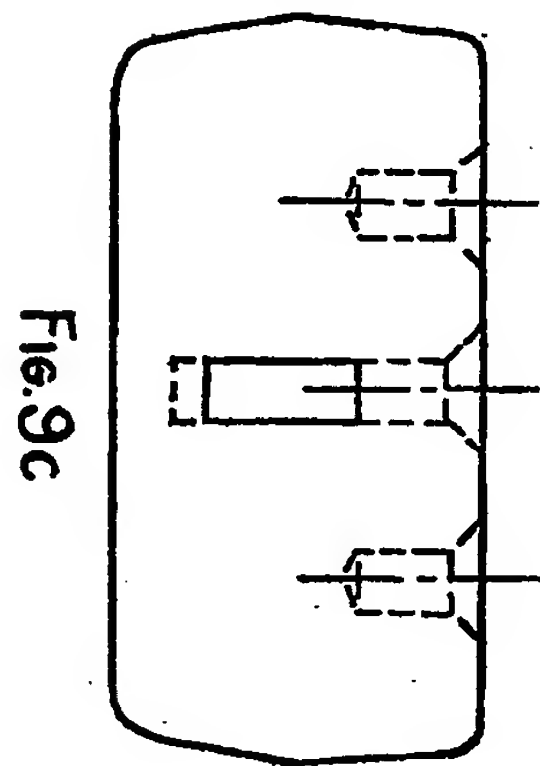
14 SHEETS

This drawing is a reproduction of  
the Original on a reduced scale.

SHEET 9



PART K



1,357,517  
14 SHEETS

COMPLETE SPECIFICATION  
This drawing is a reproduction of  
the Original on a reduced scale.  
SHEET 10

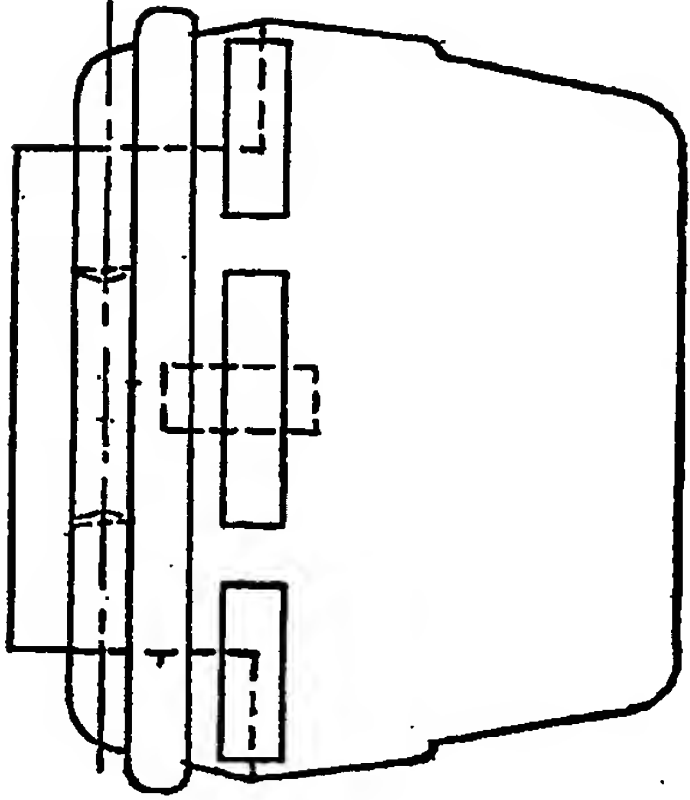


Fig. 10A

PART L

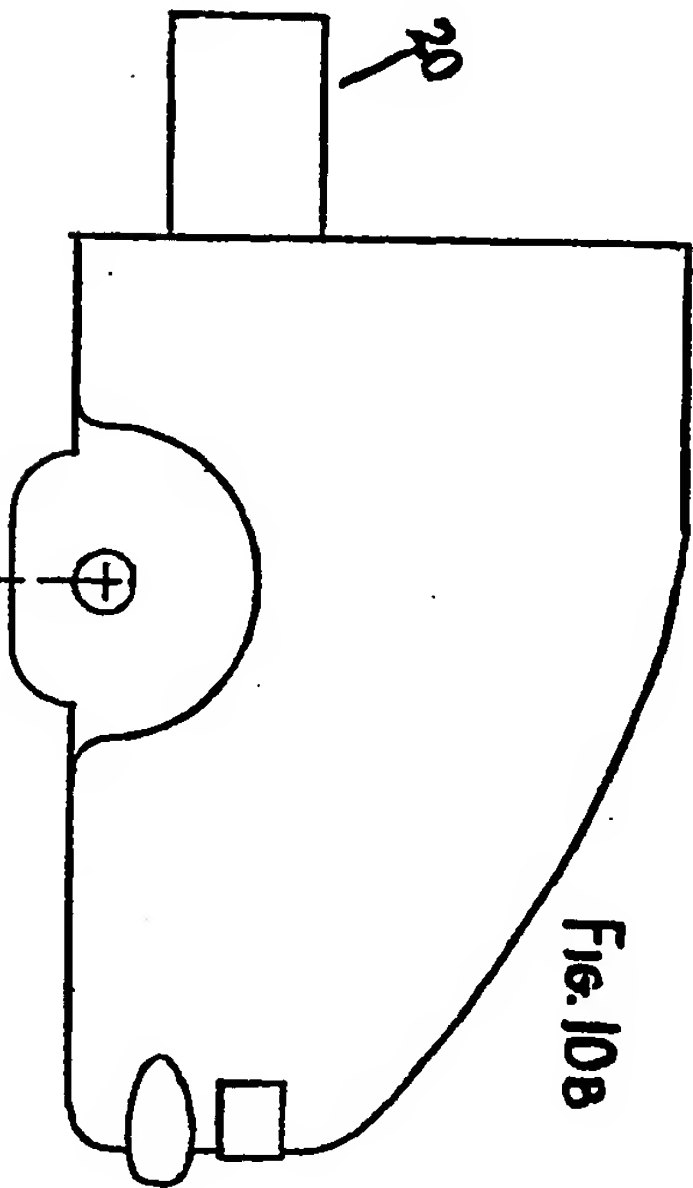


Fig. 10B

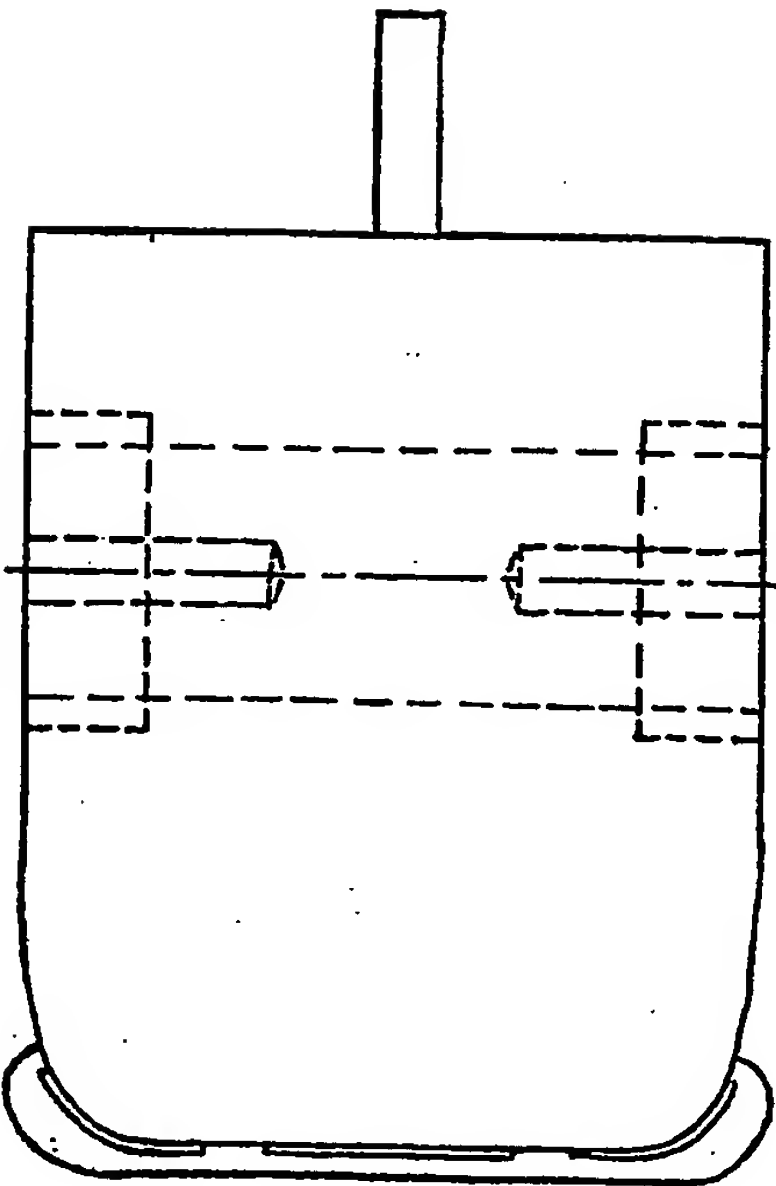
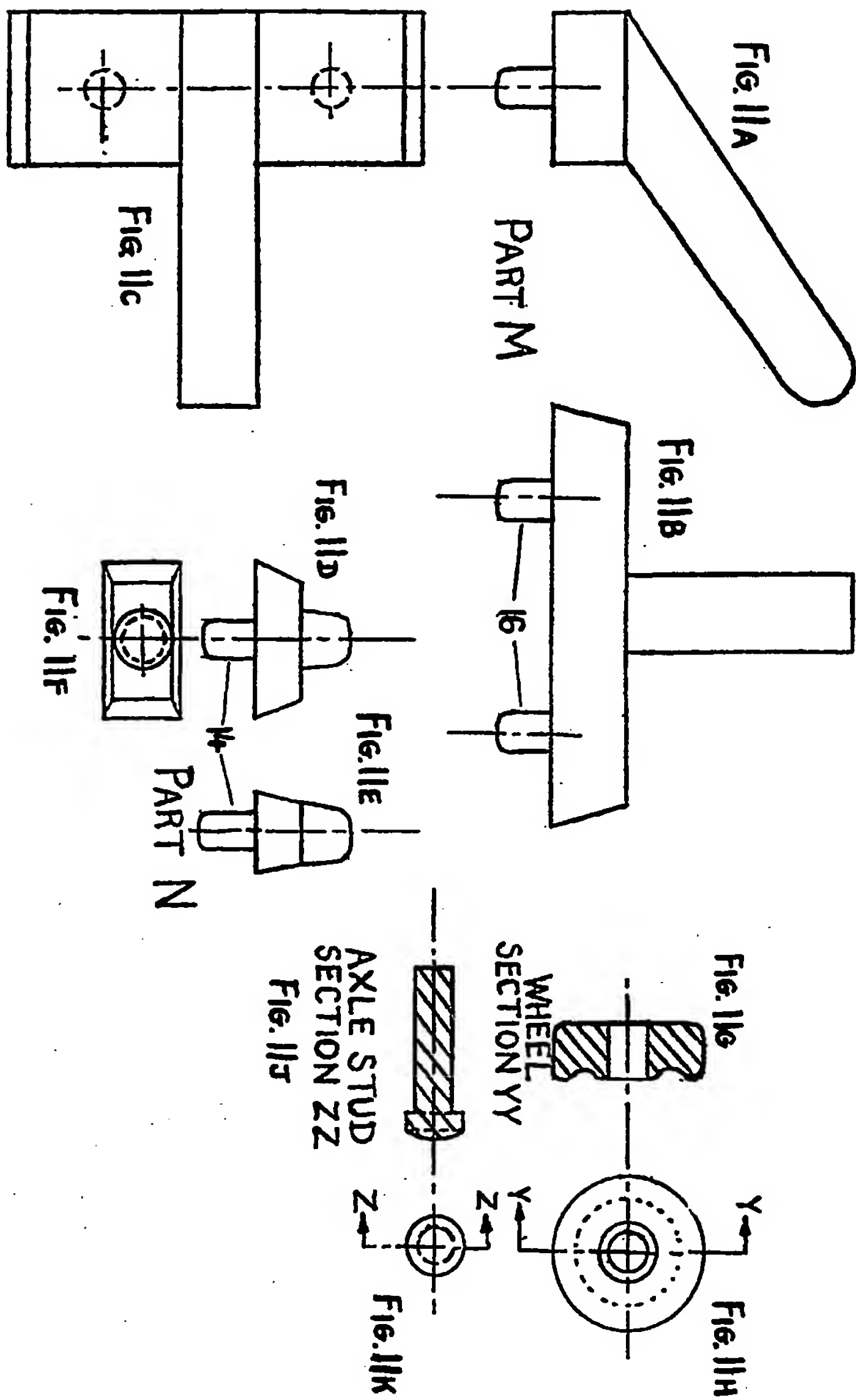


Fig. 10C



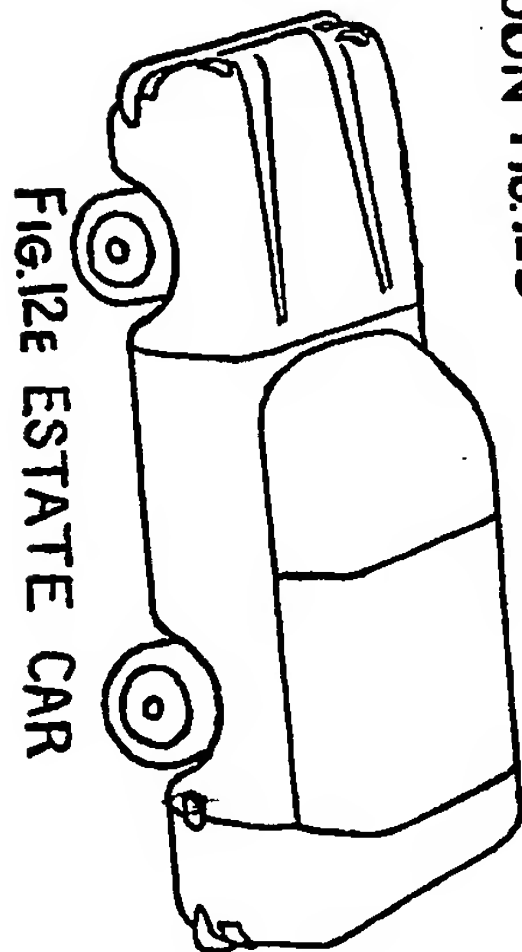
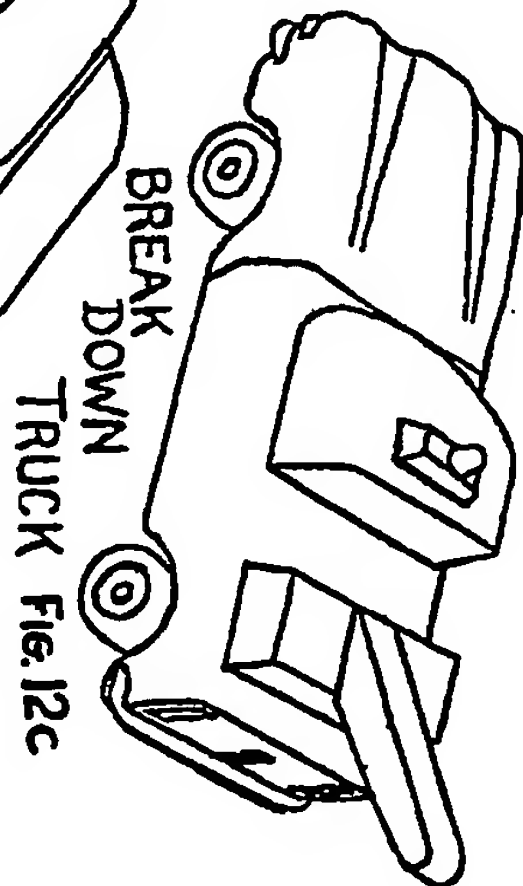
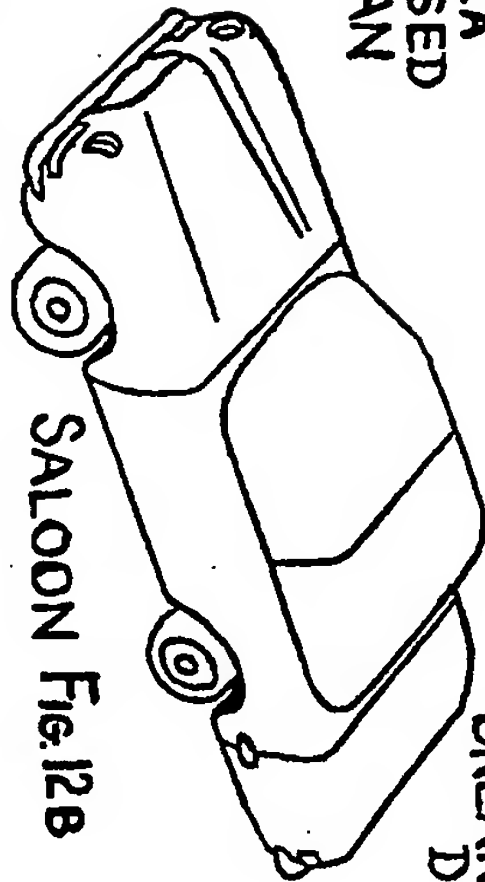
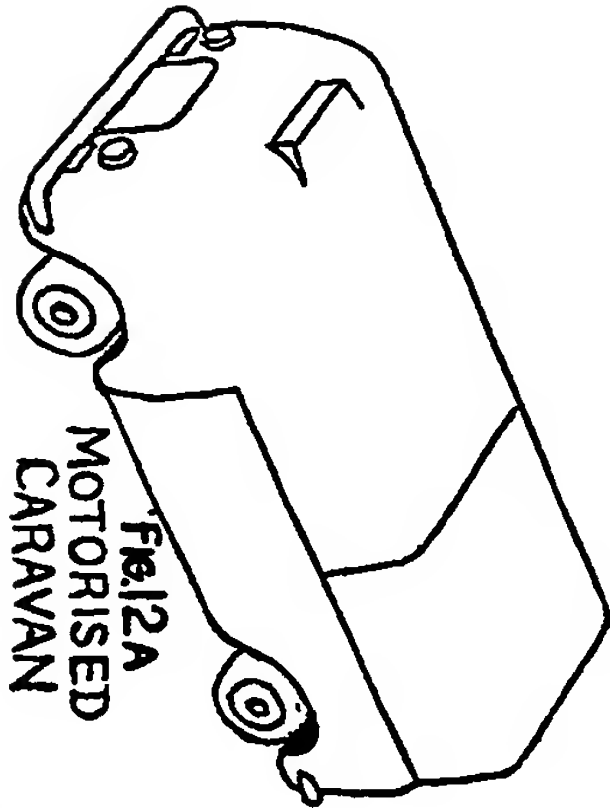
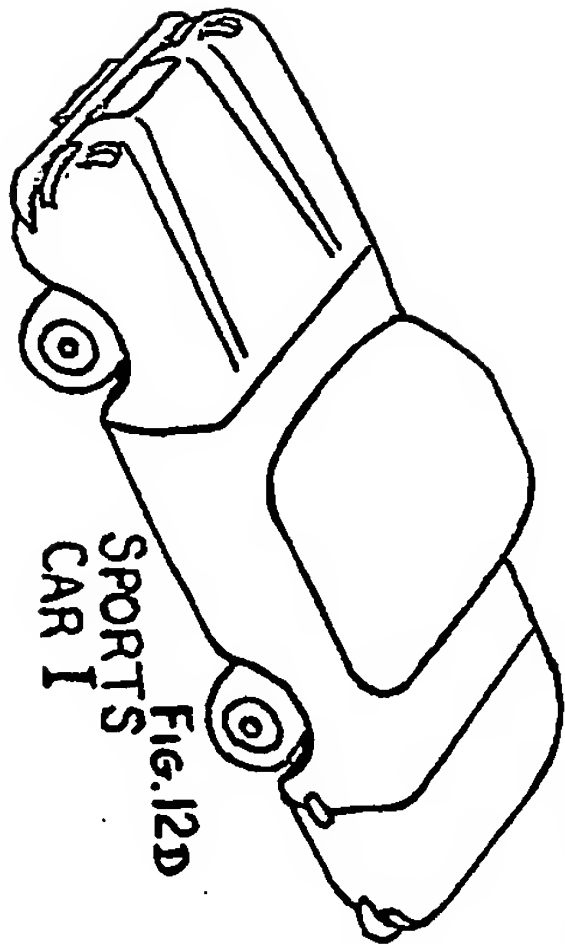
1,357,517

COMPLETE SPECIFICATION

14 SHEETS

This drawing is a reproduction of  
the Original on a reduced scale.

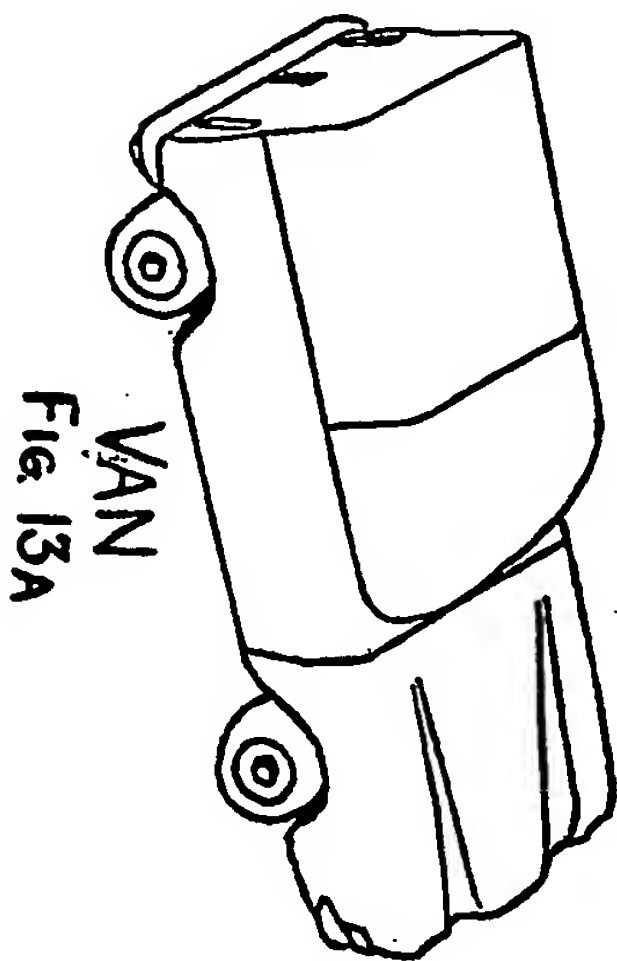
SHEET 12



1,357,517  
14 SHEETS

COMPLETE SPECIFICATION

This drawing is a reproduction of  
the Original on a reduced scale.  
SHEET 13.



VAN  
Fig. 13A

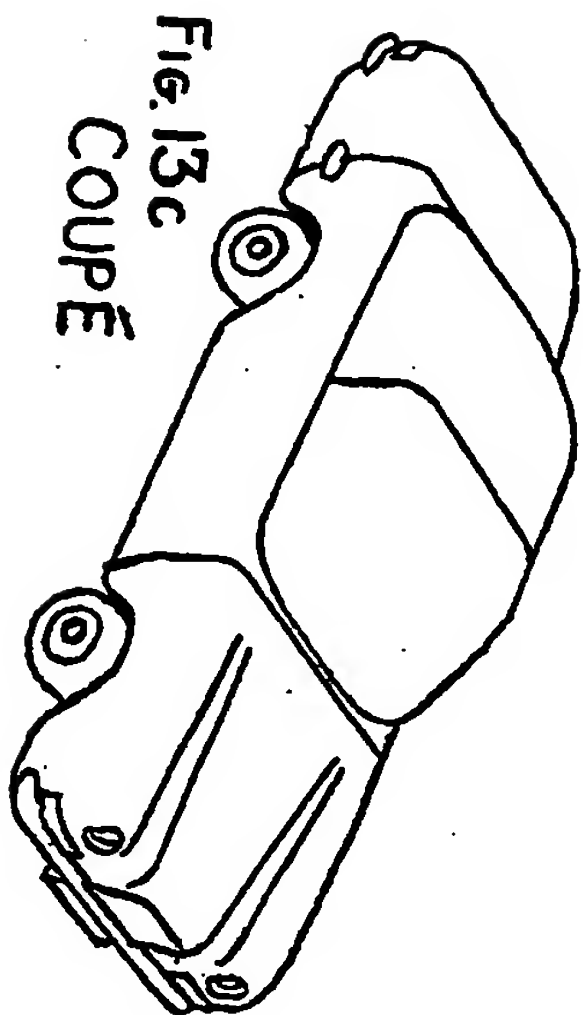
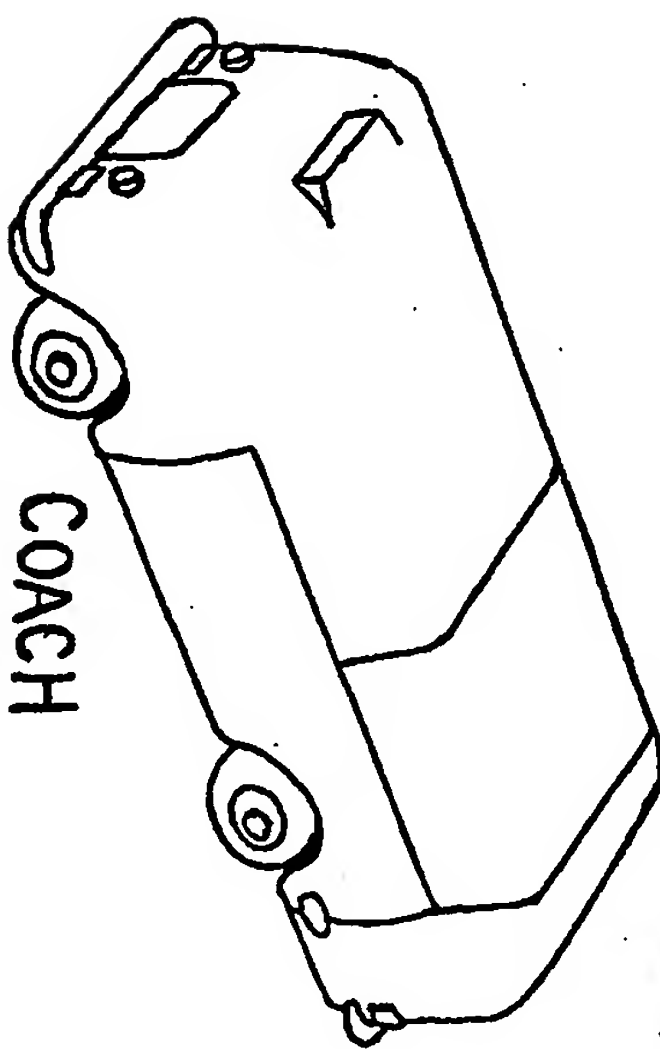


Fig. 13c  
COUPÉ



COACH  
Fig. 138

ORIGINAL

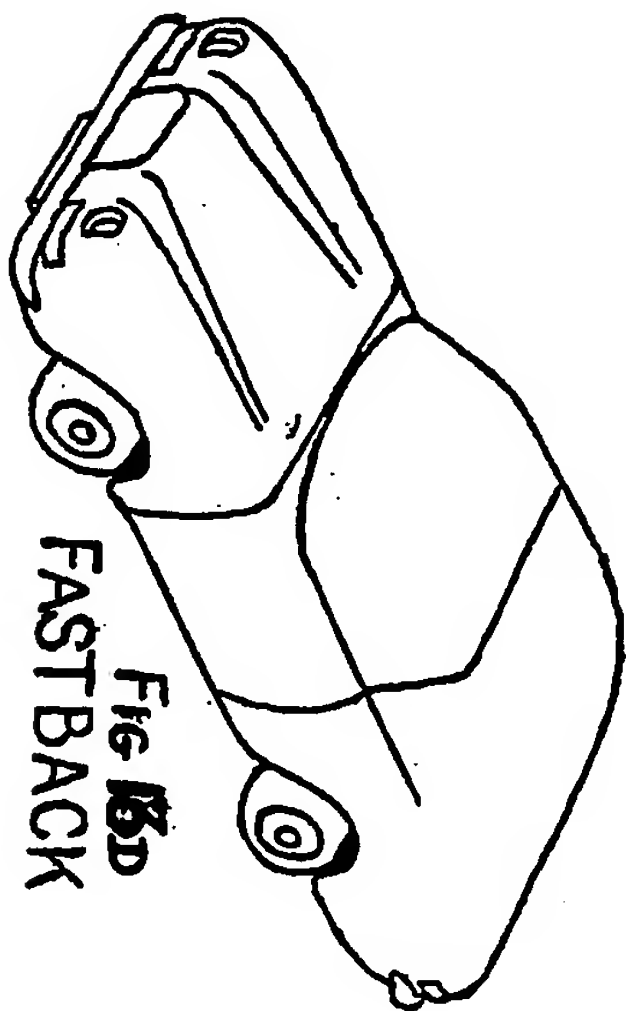


Fig. 13d  
FASTBACK



1,357,517

COMPLETE SPECIFICATION

14 SHEETS

This drawing is a reproduction of  
the Original on a reduced scale.

SHEET 14

